



Wolf Communication

Wolves communicate in many ways employing vocalisation, body language, eye contact, touching and scent. At any one time, many of the signals are read simultaneously, giving a far greater view of a situation or interaction than we can understand with our limited senses. For ease of understanding, each category has been split.

Olfactory Communication

A wolf's sense of smell is far greater than humans' with approximately 200 million olfactory cells housed in the nose and is probably its most acute sense. Scent can convey identity, gender, breeding condition, social status, emotional state, age, condition and even diet. Secretion through the skin not only helps the pelt to remain healthy but also acts as chemical communication.

Feet

Wolves have 2 types of sweat glands in their feet. These not only help with sweating and other functions but can lay down a separate scent mark and visual signal to urine and faeces deposits. This is combined with a visual signal made by the claws and feet, directing the reader towards the message.

Back and Tail

Little is known about the role of the scent glands which run down a canine's back but it is thought that these are more important in communication than were previously considered. The raising of hackles when the wolves are aroused releases scent in this area.

Wolves have a supracaudal gland about a third of the way down the tail. It is easily seen as a black finger print and has no under coat. Little is known about its use but it is felt it plays a role in identifying individuals. It has also been suggested that it is rubbed onto the roof of the den at the entrance.

Ears

It has been noted that it is more likely for a male to investigate a female's ear (20 times more frequently) suggesting it could be related to gender information.

Anal Sac

Various roles have been linked to anal secretion. These include individual identification, fear and breeding as males secrete more anal gland fluid in breeding season. Anal gland fluid is not always deposited on faeces but when it is, it can leave a lasting chemical message for other wolves. Wolves will sometimes express their anal glands when in extreme fear but again little is known why.

Preputial Glands

These glands line the opening of the penile sheath and vulval folds and are likely to emit sexual odour. They may also play a part in scent marking as they are washed away in urine. The Preputial gland secretion is also evident in very young cubs as a creamy fluid. This seems to trigger the adult to lick the area and stimulate urination.

Vagina

Breeding cycle is evident from vaginal secretion and males are often seen licking a female's vulva to ascertain breeding status.

Saliva

Saliva may also contain information on gender and reproductive state and males are more often seen licking the muzzles of female wolves. It is also thought to leave a partner-recognition scent or maintain mother/pup bonding by smell.

Faeces

Faeces are used for territorial scent marking and are often left in conspicuous places where it is easy to see. It has been noted in captive wolves that scat is often left just inside the enclosure where staff enter, possibly it is a boundary warning.

Urine

Wolves will urinate more often around the edges of their territory than in the middle, creating an olfactory fence line. They will also urinate in new places which is said to be a fear response to an unfamiliar area. The wolf is reassured and comforted when the area smells of them.

Marking increases in the breeding season by the alpha pair who are often seen over-scenting each others urine. This helps with pair bonding, advertising reproduction status and stopping intrusion by other males.

Scent rolling

A number of theories exist about this behaviour. These include an effective way of covering over your own scent, familiarisation with a new scent and a strong attraction to a novel scent. The smell is usually rubbed on to the side of the neck and shoulder area and any novel smell can stimulate this response.

Visual Communication

Visual communication seems to be every bit as important as hearing and smell. The whole body is employed in this form of complex communication. It is of course backed up with vocalisation and scent messages. Body language is most often described at its simplest in canines as dominant or submissive behaviour. Although in wolf behaviour a neutral attitude can also be described. For more detailed descriptions of all wolf behaviours see Wolf Ethogram by Wolf Park, 4004 E 800 N, Battle Ground, IN 47920 USA www.wolfpark.org

Submission

Submission comes in two forms active and passive. In the passive submission the wolf lies partly on its side and partly on the back with the tail tucked up against the belly and legs tucked in with ears back. The wolf will lie as still as it can and will only move a hind leg to allow the dominant wolf more access to the belly area. Active submission can look like the wolf is being very puppy like. It will approach the more dominant wolf with ears back head down and hind quarters and tail tucked under. It may urinate on approach and will attempt to muzzle-lick. It may progress to pawing at the face of the dominant wolf. If the dominant animal is not appeased by this behaviour or escalates its response the submissive wolf may go in to passive submission.



Dominance

Wolves in a dominant posture around a submissive animal will grow in stature when interacting and will often appear larger than life with stiff legs, raised hackles, head and tail. This does not always happen and when the interaction is low or indirect may simply have a higher tail carriage than the lower ranking wolf. The dominant animal is often aloof and can control behaviour in others by simple eye contact.

Auditory

The wolf's most identifiable vocalisation is of course the howl. This auditory communication can travel over distance and be interpreted day or night by another wolf. However, as howling is so recognisable we tend to forget about all the other vocalisations a wolf makes, many of which are quiet and very subtle. These include growling, whining, barking, squeal, whimpering, scream, yelp, moan, snarl, woof, and humming.

Cub vocalisations - Neonatal to juvenile (Scream/ squeal/ yelp/ yawn/ moan/ whine/ growl/ bark)

Cubs vocalise at a very early age, there are three categories of distress calls i.e. if isolated they will cry out until reunited with siblings or their mother. They will also yelp if hurt. Very young pups pre-hearing often moan. This can be

seen as a contentment and location sound for the mother in a dark den or as a vibration signal to litter mates. This will decline as the cub grows. They will bark and growl from day one but not frequently until week four. Barking will be in a response to noises outside the den and growling will involve interaction between litter mates or if mum moves the cub. Woofs are associated with hesitancy and reflect uncertainty. Although wolf cubs can howl from an early age they don't regularly howl until they emerge from the den at about three weeks of age. The fact that most of these sounds are in decline and disappear around the time the cub can see, hear and move around suggests they are aimed at the mother to give a constant assessment of their needs, or dangers they may be in. By three or four weeks the cubs are able to get themselves out of danger or locate their litter mates by sight and many situations are now not life threatening. They continue to moan, whine and yelp to indicate low moderate or high levels of distress. It will take the cubs a further 5 months to develop a full adult vocal range.

Adult vocalisation

Whimper, whines and yelps are used for short range communication and are most often associated with friendly or submissive gestures.

Growls and snarls are used by more dominant wolves for assertions of leadership or as a defence or attack signal. A woof is like a whispered bark and is often given around den sites if a threat is approaching. Cubs will respond by either lying flat in the grass or returning to the den while the adults will go on the alert. It is a warning or defence call. Barking is very similar to a woof but involves the vocal cords. It is louder and can be described as a full alarm signal. Wolves will often bark but not run away from den sites if humans or other predators approach.

All these sounds can be teamed up with another sound to intensify a communication for example a whimper-yelp or bark-growl-snarl etc.



Howling is used for long range communication. Depending on the terrain and atmospheric conditions a howl can be heard over a large area. In some extremes up to 10 miles away, although 6 miles is more normal. The further a wolf is away from another howling wolf, the more the quality of the howl is affected as some of the message from the higher or lower frequencies will get lost on the way. Howling can be done singly, as a duet or in a group and can convey many things. Functions, we believe, are as a reunion mechanism if a pack member is separated, social bonding, spacing - i.e. helping packs to avoid each other, and mating, although much is still not known about this commonly associated wolf communication.

Tactile communication

Body contact is very important in cubs and the activity of huddling together can go on for several months after birth. Neonatal cubs will 'root' each other and their mother out and will often huddle around rocks etc in the den.

As adults, wolves are often seen touching in greeting ceremonies, social interaction and play. Mutual grooming also takes place and males will often lick the genital region of their mates in the breeding season. The breeding pair is also more likely to lie together at this time. In aggressive situations touch can also play a part in assessing your opponent's strength.

The study of wolf communication started half a century ago and still relatively little is understood. What is known is the wolf's communication skills are highly sophisticated and employ all its senses. They are so good at it that captive wolves have been known to read humans better than we can read ourselves.